

**FLOW THROUGH ASYNCHRONOUS ELASTIC FIFO APPARATUS AND
METHOD FOR IMPLEMENTING MULTI-ENGINE PARSING AND
AUTHENTICATION**

Abstract of the Disclosure

5 A flow through asynchronous elastic first-in, first-out (FIFO) apparatus
and method are provided for implementing multi-engine parsing and
authentication. A FIFO random access memory (RAM) has a data input for
receiving data and control information and a data output for outputting the
data and control information. The FIFO RAM includes a plurality of locations
10 for storing a plurality of words, each word including a set number of bits.
Write clocked logic is provided for loading the data and control information to
the FIFO RAM at a first clock frequency. Asynchronous read clocked logic is
provided for outputting the data and control information from the FIFO RAM
at a second clock frequency. The first clock frequency of the write clocked
15 logic and the second clock frequency of the asynchronous read clocked logic
and a data width of the FIFO RAM are selectively provided for outputting the
data and control information from the FIFO RAM with no back pressure.